भारतीय मानक **IS 2463 : 2022**

Indian Standard

जिमनास्टिक में प्रयुक्त रिग — विशिष्टि

(दूसरा पुनरीक्षण)

Ring Used in Gymnastics — Specification

(Second Revision)

ICS 97.220.30

© BIS 2022

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुरशाह ज़फर मार्ग, नई दिल्ली –110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI-110002
www.bis.gov.in www.standardsbis.in

September 2022 **Price Group 3**

Sports Goods Sectional Committee, PGD 41

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Sports Goods Sectional Committee had been approved by the Production and General Engineering Division Council.

The rings apparatus consists of two rings, typically made of wood. The rings, also known as the still rings, hang freely from a rigid metal frame. Each ring is supported by a strap, which in turn connects to a steel cable that is suspended from the metal frame. The gymnast, who grips one ring with each hand, must control the movement of the rings and his or her body movements at all times

This standard was first published in 1963 and subsequently revised in 1981. The First revision was based on the draft recommendation ISO/R 488 prepared by Gymnastics and Sports Equipment Technical Committee, ISO/TC 83 in consultation with the International Gymnastic Federation (IGF). In the second revision, the standard is aligned with international gymnastics federation. The major changes are as follows:

a) Material specifications for rings have been updated;
b) Constructional requirements have been updated; and
c) Performance requirement has been updated.

The composition of the Committee, responsible for the formulation of this standard is given at Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard
RING USED IN GYMNASTICS — SPECIFICATION
(Second Revision)

1 SCOPE

This standard covers the requirements for rings used in gymnastics.

2 REFERENCES

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreement based on standards are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
1239 (Part 2) : 2011	Steel tubes, tubulars and other steel fittings — Specification Part 2 steel pipe fittings (*fifth revision*)
2365 : 2018	Steel wire suspension ropes for lifts, elevators and hoists — Specification (*second revision*)

3 TERMINOLOGY

3.1 Static tractive force - The predetermined value of force exerted on one ring while pulling the ring vertically downwards.

3.2 Starting position - The vertical position of the unloaded ring within the mounted ring frame before loading it with a defined static tractive force. The lower inner side of the ring shall serve as the point of reference.

4 CONSTRUCTION AND WORKMANSHIP

4.1 The apparatus shall consist of two circular rings, attached to cables suspended on a frame. The rings shall have a uniform, circular profile. The cables shall hang vertically in their still position. The frames shall consist of two supports and a horizontal beam that contains the attachment devices of the cables. The frame is held upright by four tension cables, anchored to the floor.

4.2 A strap of leather or equivalent material shall be provided between the swing rope and the ring. The ends of the strap shall be suitably sewed.

4.3 The swing rope shall be suitably supported so that it may be turned at its points of suspension in the direction of the movement required and swing out freely in all directions. A pivoting device shall be provided between the suspension equipment and the swing ropes in order to permit rotation of the ropes about their longitudinal axes.

4.4 Swing rope shall not kink when not loaded and shall have the same height above the ground under load conditions.

4.5 The ring shall guarantee a sure grip and shall not be slippery. It shall be left natural-finished.

5 REQUIREMENTS

5.1 Material

5.1.1 *Swing Rope*

The swing rope used shall be a flexible steel wire rope of 6 mm diameter confirming to rope grade single tensile 1420 of IS 2365.

5.1.2 *Tension Rope*

The tension rope used shall be a steel wire rope of 6 to 7 mm diameter similar to swing rope except that its tensile strength is 1100 to 1250 N/mm^2.

5.1.3 *Frame*

The frame, which consists of the uprights and the crossbar, shall be made of heavy grade galvanized mild steel tubing of 40 mm nominal diameter conforming to IS 1239 (Part 2).

5.1.4 *Strap*

The straps, to which the rings are attached, shall be made of leather or any other equivalent material.

5.1.5 *Ring*

The ring shall be made of a suitable good quality, well-seasoned hardwood or synthetic materials, however, steel corings shall not be used for rings. The recommended species of timber are:

Standard Trade Name	*Botanical Name*
Axlewood	*Anogeissus latifolia*
Babul	*Acacia nilotica*
Benteak	*Lagerstroemia lanceolata*
Bijasal	*Pterocarpus marsupium*
Dhaman	*Grewia tilijolia*
Hopea	*Hopea*
Kardhai	*Anogeissus pendula*
Laurel	*Terminalid alata*
Lendi	*Lagers,troemia parvijflora*
Sandan	*Ougeinia oojeinensis*
Satinwood	*Chloroxylono swietenia*
Sissoo	*Dalbergia sksoo*
White cedar	*Dysoxylum malabaricum*

5.1.6 The timber shall be well seasoned to a moisture content between 10 to 14 percent. It shall be fairly straight-grained and free from the center heart (pith), any kind of decay (rot), borer holes, dead knots and any other defect which may adversely affect the utility.

5.2 Shape and Dimension

The dimension of the apparatus including rings shall be as given in Fig. 1. Where shape and dimensions are not specified, they are left to the discretion of the manufacturer.

6 PERFORMANCE REQUIREMENT

When tested according to the procedures given in Annex A, the rings shall return to the starting position within a tolerance of 5 mm and no damage or residual deflection shall be observed.

7 PACKING AND MARKING

7.1 Packing

The rings shall be packed as agreed to between the purchaser and the supplier.

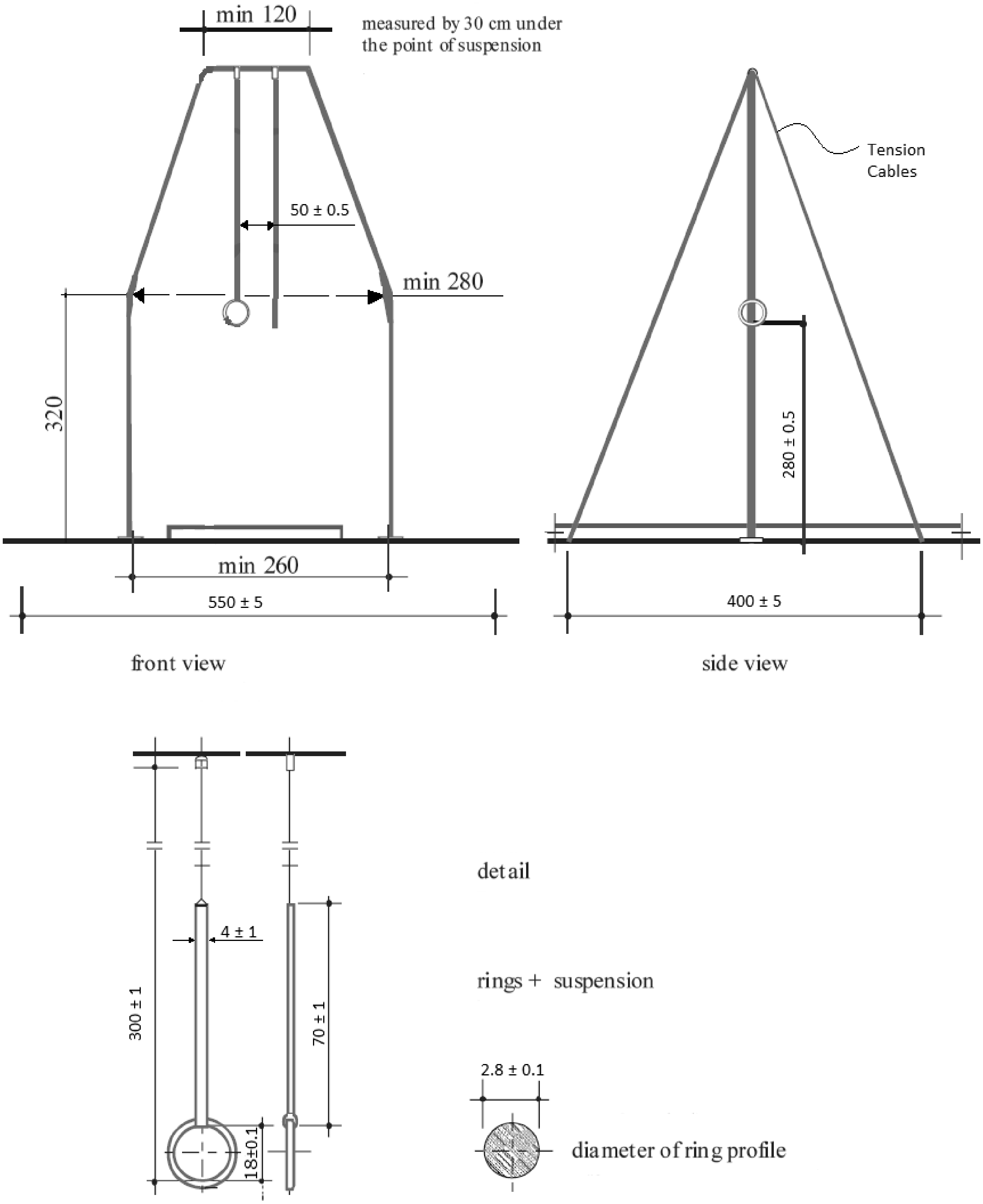
7.2 Marking

7.2.1 The rings/package shall be marked with the followings:

a) Manufacturer’s name and trade-mark; and
b) Month and year of manufacture.

7.2.2 *BIS Certification Marking*

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the product(s) may be marked with the standard mark.



(All dimensions are in centimeters)

FIG. 1 RINGS

ANNEX A

(*Clause* 6)

PERFORMANCE REQUIREMENT

A-1 TEST SPECIMEN

The test specimen for testing shall consist of a complete ring frame as it is intended to be used during training or competition.

A-2 TEST APPARATUS

Any type of test set-up is acceptable that is capable to stress the test specimen under prescribed conditions. The device which applies the test load to the ring shall have a width of 35 ± 1mm.

A-3 TEST PROCEDURE

Mount the ring frame with the rings at a height as prescribed for competitions. Install the traction device on one ring and determine the starting position. Pull the ring vertically downwards with a static tractive force of 4000 ± 40 N. After the release of the static tractive force verify whether the ring returns to the starting position. Report any fraction or observed permanent deflection in any part of the test specimen. Repeat this test for both of the rings.

ANNEX B
(*Foreword*)

COMMITTEE COMPOSITION

Sports Goods Sectional Committee, PGD 41

Organization	*Representative(s)*
Sports Goods Export Promotion Council	SHRI TARUN DEWAN (***Chairman***)
All India Lawn Tennis Association, New Delhi	SHRI NAR SINGH
Anand and Anand	SHRI ASHISH ANAND
Athletic Federation of India	SHRI SANDEEP MEHTA SHRI GOPALA KRISHNAN (*Alternate*)
Central Institute of Plastics Engineering & Technology (CIPET), Murthal	DR S N YADAV
COSCO India Pvt Ltd, Gurgaon	SHRI PANKAJ JAIN SHRI NARINDER JAIN (*Alternate*)
Director Equipment, Sports Authority of India, New Delhi	SHRI ROQUE DIAS
Freewill Sports Pvt Ltd., Jalandhar	SHRI RAJESH KHARBANDA
Government e Market Place, New Delhi	SHRI N K MALHOTRA
Gymnastic Federation of India, Mumbai	SHRI RIAZ BHATI
Hockey India	COMMANDER R K SRIVASTAVA
Micro, Small and Medium Enterprises, Technology Development Centre, New Delhi	SHRI V K SINGH
NELCO (India) Pvt Ltd, Meerut	SHRI AMBER ANAND
Office of Development Commissioner (MSME), Delhi	SHRI SUNIL GUPTA
Premier Enterprises, Meerut	SHRI SUMESH AGARWAL SHRI KSHITIJ AGARWAL (Alternate)
Process cum Product Development Centre, Meerut	SHRI SUNIL GUPTA
Ranson Sports Industry, Jalandhar	SHRI ARVIND SINGH RANA
Sanspareils Greenlands Pvt Ltd.	SHRI PUNEET ANAND SHRI ALOK MISHRA (*Alternate*)
Shriram Institute For Industrial Research, Delhi	DR VINAY TYAGI

Organization	*Representative(s)*
Soccer International Pvt Ltd. Jalandhar	MS SHAALINI GUPTA
Softball Association of India	MS SHIBANI TAGORE
Sports Goods Manufacturers and Exporters Association (SGMEA), Jalandhar	MS HARSHITA
Sports Line, New Delhi	SHRI OJASVI NAGPAL
Stag International Sports, Meerut	SHRI RAKESH KOHLI SHRI VIVEK KOHLI (*Alternate*)
Universal Sports, Jalandhar	SHRI MAHESH CHADHA
Vats Sports, Meerut	SHRI LOKESH VATS
Voluntary Organisation in Interest of Consumer Education (VOICE), New Delhi	SHRI M A U KHAN
Director General, BIS	SHRI R R SINGH, SCIENTIST 'E', DIRECTOR AND HEAD (PGD) [REPRESENTING DIRECTOR GENERAL (*Ex-officio*)]

Member Secretary
SHRI AJAY KUMAR
ASSISTANT DIRECTOR AND SCIENTIST 'B' (PGD), BIS

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 2016 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Head (Publication & Sales), BIS.
Review of Indian Standards

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the website- www.bis.gov.in or www.standardsbis.in.

This Indian Standard has been developed from Doc No.: PGD 41(18534).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones: 2323 0131, 2323 3375, 2323 9402 *Website*: www.bis.gov.in

Regional Offices:		*Telephones*
Central:	601/A Konnectus Tower-I, 6th Floor DMRC Building, Bhavbhuti Marg, New Delhi 110 002	2323 7617
Eastern:	8th Floor, Plot No. 7/7 & 7/8, CP Block, Sector V Salt Lake, Kolkata 700091	236 7012, 2320 9474
Northern:	Plot No. 4A, Sector 27-B, Madhya Marg Chandigarh 160 019	265 0206, 265 0290
Southern:	C I T Campus, IV Cross Road, Taramani Chennai 600 113	2254 1442, 2254 1216
Western:	Plot No. E-9, Road No. 8, MIDC, Andheri (East) Mumbai 400 093	28218093

Branches: AHMEDABAD, BENGALURU, BHOPAL, BHUBANESHWAR, CHANDIGARH, CHENNAI, COIMBATORE, DEHRADUN, DELHI, FARIDABAD, GHAZIABAD, GUWAHATI, HIMACHAL PRADESH, HUBLI, HYDERABAD, JAIPUR, JAMMU & KASHMIR, JAMSHEDPUR, KOCHI, KOLKATA, LUCKNOW, MADURAI, MUMBAI, NAGPUR, NOIDA, PANIPAT, PATNA, PUNE, RAIPUR, RAJKOT, SURAT, VIJAYWADA.

Publication Unit, BIS, New Delhi, India